DECISION
AND
FINDING OF NO SIGNIFICANT IMPACT
FOR THE ENVIRONMENTAL ASSESSMENT:
INTEGRATED WILDLIFE DAMAGE MANAGEMENT FOR
COYOTES AND FERAL DOGS IN PENNSYLVANIA

I. INTRODUCTION

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Wildlife Services program (WS) receives and responds to a variety of requests for assistance from individuals, organizations, and agencies experiencing damage and other problems related to wildlife. Wildlife damage management is the alleviation of damage or other problems caused by or related to the presence of wildlife, and is recognized as an integral part of wildlife management (The Wildlife Society 1992). In December 2004, WS released an Environmental Assessment (EA) "*Integrated Wildlife Damage Management of Coyotes and Feral Dogs in Pennsylvania*". Ordinarily individual WS damage management actions are categorically excluded and do not require an environmental assessment (EA) (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). However, in order to facilitate planning, interagency coordination, and the streamlining of program management, and to clearly communicate with the public the analysis of cumulative impacts from WS's proposed program, the EA on alternatives for managing coyote and feral dog damage in Pennsylvania was prepared. The EA documented the need for integrated coyote and feral dog damage management (IWDM) in Pennsylvania and assessed potential impacts of various alternatives to respond to conflicts and concerns related to the activities of coyotes and feral dogs. The EA and supporting documentation are available for review at the USDA-APHIS-WS State Office, P.O Box 60827 Harrisburg, PA 17106-0827. WS conducted a National Environmental Policy Act (NEPA) analysis and developed a Final Environmental Impact Statement (FEIS) on the national WS program (USDA 1997, Revised). The FEIS contains detailed discussions of potential environmental impacts from various wildlife damage management methods. Pertinent information available in the FEIS has been incorporated by reference into this EA. Copies of the FEIS are available from the USDA/APHIS/WS, Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD 20737-1234.

The purpose of the proposed program is to reduce damage to property, agriculture, and natural resources and reduce risks to human health and safety resulting from the activities of eastern coyotes (*Canis latrans*) and feral dogs (*Canis familiaris*) in Pennsylvania. The EA was prepared in consultation with the Pennsylvania Game Commission (PGC) and the Pennsylvania Department of Agriculture (PDA) to determine impacts on State wildlife populations and to ensure that the proposed actions are in compliance with relevant laws, regulations, policies, orders and procedures. All WS IWDM activities will be conducted consistent with the Endangered Species Act of 1973 including consultation with the United States Department of Interior, Fish and Wildlife Service (USFWS), and all other applicable Federal, State and local laws, regulations and policies.

II. BACKGROUND

The determination of a need for WS assistance with coyote and feral dog IWDM in the Commonwealth of Pennsylvania is based on coyote and feral dog damage to agricultural and natural resources, property, and risks to public health and safety. Some of the types of damage that resource owners/managers seek to alleviate are: predation on livestock (e.g., sheep, goats, cattle, pigs, horses) and poultry (e.g., chickens, turkeys, fowl) [referred herein collectively as livestock]; threat of disease transmission to livestock;

predation and injury to pets; threats to human health or safety; and hazards to aviation at airports. Details on the conflicts associated with coyotes and feral dogs in Pennsylvania are provided in the EA.

The Pennsylvania Bureau of Dog Law Enforcement (Article V-A; Section 501) states: "Any person may kill any dog which he sees in the act of pursuing or wounding or killing any domestic animal, wounding or killing other dogs, cats, or household pets, or pursuing, wounding or attacking human beings, whether or not such a dog bears the license tag required by the provisions of this act. There shall be no liability on such persons in damages or otherwise for such killing". Pennsylvania Game Commission (Chapter 21, subchapter B, Section 2121) states: "General rule - Subject to any limitations in this subchapter, nothing in this title shall be construed to prohibit any person from killing any game or wildlife: which the person may witness actually engaged in the material destruction of cultivated crops, fruit trees, vegetables, livestock, poultry or beehives; anywhere on the property under the person's control, including detached lands being cultivated for the same or similar purposes, immediately following such destruction; or where the presence of the game or wildlife on any cultivated lands or fruit orchards is just cause for reasonable apprehension of additional imminent destruction. Lands divided by a public highway shall not be construed as detached lands. Any person who wounds any game or wildlife shall immediately make a reasonable effort to find and kill the game or wildlife. Every person shall comply with all other regulations in this subchapter pertaining to the method and manner of killing, reporting the killing and the disposition of game or wildlife and their skins and carcasses". Resource owners/mangers can also make their land available to trappers as a means of addressing damage problems. In Pennsylvania, there is no closed hunting season for coyotes and take is unlimited, with some exceptions during the deer and spring turkey seasons. Coyote trapping is unlimited from October 17 to February 19, 2005. The WS EA only evaluated alternatives for WS involvement in IWDM and cannot change Pennsylvania Game Commission or Pennsylvania Bureau of Dog Law Enforcement policy permitting private landowners access to lethal and non-lethal alternatives for managing coyote and feral dog damage. Therefore, a major overarching factor in determining how to analyze potential environmental impacts of WS' involvement in IWDM is that such management will likely be conducted by state, local government, or private entities that are not subject to compliance with NEPA if WS is not involved. This means that the Federal WS program has limited ability to affect the environmental outcome of IWDM in the Commonwealth, except that the WS program is likely to have lower risks to nontarget species and less impact on wildlife populations than some alternatives available to resource owners/managers. Therefore, WS has limited ability to affect the environmental *status quo*. Despite this limitation to federal decision-making, this EA process is valuable for informing the public and decision-makers of the substantive environmental issues and alternatives for management of coyote and feral dog damage.

III. ISSUES ANALYZED IN THE EA

The following issues were identified as important to the scope of the analysis (40 CFR 1508.25) and each of the proposed alternatives was evaluated relative to its impacts on these issues.

- Effects on Target (coyote) Species Populations,
- Effects on Dogs,
- Effects on Non-target Wildlife Populations, including T&E Species,
- Effects on Human Health and Safety,
- Humaneness of Control Methods Used by WS,
- Effects on the Aesthetic Values of Target and Non-target Species

An additional 5 issues were considered but not evaluated in detail:

- Legal Constraints on Implementation of Control;
- Appropriateness of Preparing an EA (Instead of an EIS) for Such a Large Area;

- Cost Effectiveness of Coyote and Feral Dog Damage Management;
- Effects on Legal Hunting and Trapping; and
- Lethal Methods may Increase Damage and the Coyote Population through Compensatory Reproduction.

IV. ALTERNATIVES ANALYZED IN DETAIL

The following alternatives were developed to analyze and respond to issues. Seven additional alternatives were considered but not analyzed in detail. A detailed discussion of the effects of the alternatives on the issues is provided in the EA.

Alternative 1 – Technical Assistance Only

This alternative precludes any and all direct control activities by WS to reduce coyote and feral dog damage in Pennsylvania. If requested, affected individuals would only be provided with technical assistance (information) on how to solve their problem. Individuals or agencies might choose to implement WS recommendations, implement methods not recommended by WS, use contractual services of private businesses, use volunteer services of private organizations, or take no action. Risks to the environment may be greater than with a WS program if the individual conducting the damage management does not have the training and experience of a WS specialist.

Alternative 2 – Non-lethal Control Only

Under this alternative, only non-lethal direct control activities and recommendations would be provided by WS to resolve coyote and feral dog damage. Requests for information regarding lethal management approaches would be referred to the PGC, local animal control agencies, or private businesses or organizations. Individuals or agencies might choose to implement WS non-lethal recommendations on their own, implement lethal methods or other methods not recommended by WS, contract for WS operational assistance with non-lethal methods, use contractual services of private businesses, use volunteer services of private organizations, or take no action. Risks to the environment may be greater than with a WS program if the individual conducting the damage management does not have the training and experience of a WS specialist.

Non-lethal control methods may include, but are not limited to, fencing, shed birthing, guard animals (i.e., dogs, llamas, and donkeys), harassment (frightening devices), and shepherds. These are discussed in detail in Appendix B of the EA. Persons receiving non-lethal assistance could still resort to lethal methods, but not with WS assistance. Lethal control methods which could be implemented by the public may include: shooting, gas cartridges (not yet registered in PA) calling and shooting, snares, and trapping. Livestock Protection Collars are registered in the Commonwealth of Pennsylvania for use by WS employees only. Therefore, use of this chemical by private individuals and state and local government agency personnel would be illegal.

Alternative 3 – Non-lethal Control before Lethal Control

This alternative would require that all non-lethal methods or techniques described in section 3.1.2 of the EA be applied and determined to be inadequate in each damage situation prior to the implementation of any of the methods or techniques described in section 3.1.4 of the EA. This would be the case regardless of the severity or intensity of the damage.

Alternative 4- Lethal Control Only

This alternative would only allow WS to use and recommend lethal damage management techniques and would not allow WS to use or recommend non-lethal methods. Lethal control methods would be applied in all areas of control operations. Lethal methods of wildlife control are often very effective when used properly. Specific problem animals can be targeted and removed without negatively affecting the local population of a species (Bailey 1984). Requests for information regarding non-lethal management approaches would be referred to the PGC, local animal control agencies, or private businesses or organizations. Individuals or agencies might choose to implement WS lethal recommendations on their own, implement non-lethal methods or other methods not recommended by WS, contract for WS' operational assistance with lethal methods, use contractual services of private businesses, use volunteer services of private organizations, or take no action. Risks to the environment may be greater than with a WS program if the individual conducting the damage management does not have the training and experience of a WS specialist.

WS would lethally remove target individuals using the methods and techniques listed in Appendix B of the EA. Not all of the methods listed in Appendix B of the EA as potentially available to WS would be legally available to all other agencies or individuals (e.g., LPCs). All WS actions would be implemented in accordance with applicable Federal, state, and local laws, and WS policy. Deceased animals would be disposed of in accordance with WS policy and State Regulations.

Dogs captured by WS would be turned over to the Bureau of Dog Law Enforcement. Coyotes caught in traps or snares would be euthanized on site by injection with a FDA and WS approved drug or by shooting. Weather and environmental conditions permitting, traps and snares would be checked at least once each day. If daily checking is not possible, this equipment would be removed from the site. LPCs would be checked according to label specifications.

Alternative 5- Integrated Wildlife Damage Management (Proposed Action)

Wildlife Services proposes to implement an integrated coyote and feral dog damage management program in Pennsylvania to assist livestock producers in reducing losses to sheep, cattle, goats, pigs, poultry, and other livestock; and public and private entities with reducing pet losses and injury; and human health or safety concerns associated with coyotes and feral dogs. An IWDM approach would be implemented on all private and public lands of Pennsylvania where a need exists, assistance is requested from landowners or public officials, and funding is available. The IWDM strategy would encompass the use of practical and effective methods of preventing or reducing damage while minimizing harmful effects of damage management measures on humans, target and non-target species, and the environment. Under this action, WS would provide technical assistance and operational damage management, including non-lethal and lethal management methods by applying the WS Decision Model (Slate et al.1992). Cooperators requesting assistance would be provided with information regarding the use of effective non-lethal and lethal techniques (See Appendix B of EA). Most non-lethal methods are best implemented by the cooperator and the following methods may be recommended by WS: guard dogs, llamas, and donkeys; Electronic Predator Guard (Linhart et al. 1992); fencing; moving livestock to other pastures; birthing in buildings; night penning; habitat alteration; herders and scare devices. Additional methods used by WS, or recommended to producers, may include shooting, calling and shooting, trapping, snares, decoy dogs, Livestock Protection Collars, and gas cartridges (if registered in Pennsylvania). In determining the damage management strategy, preference would be given to practical and effective non-lethal methods. However, non-lethal

methods may not always be applied as a first response to each damage problem. The most appropriate response could often be a combination of non-lethal and lethal methods, or could include instances where application of lethal methods alone would be the most appropriate strategy. All management actions comply with appropriate Federal, state, and local laws.

Alternative 6- No Action

This alternative would result in no Federal WS Coyote and Feral Dog Damage Management program in Pennsylvania. WS would not provide technical assistance or direct damage management services. However, producers, property owners, agency personnel, or any other entity directed at preventing or reducing damage by coyotes or feral dogs could conduct management activities in the absence of WS involvement. Requests for WS assistance would be referred to the PGC, local animal control agencies, or private businesses or organizations. Individuals or agencies might choose to implement their own damage management program, use contractual services of private businesses, use volunteer services of private organizations, or take no action. Risks to the environment may be greater than with a WS program if the individual conducting the damage management does not have the training and experience of a WS specialist.

V. MONITORING

The Pennsylvania WS program will annually monitor the impacts of its actions relative to each of the issues analyzed in detail in the EA. This evaluation will include reporting the WS take of all target and nontarget species to help ensure no adverse impact on the viability of any target or non-target species population including State and Federally listed threatened and endangered species. PGC expertise will be used to assist in determining impacts on State wildlife populations.

VI. PUBLIC INVOLVEMENT

As part of this process, and as required by the CEQ and APHIS-NEPA implementing regulations, an announcement of the availability of the EA for public review and comment was made through "Notices of Availability" (NOA) published in the five major newspapers throughout the Commonwealth and through direct mailings to parties that have specifically requested to be notified. Sixteen (16) letters were mailed to organizations, individuals, and public agencies announcing that the EA was available. WS received 3 requests for copies of the EA for review. Following the 30 day public review and comment period, PA WS received 14 comments on the EA. All comments were considered in detail and reviewed for substantive and relevant issues. Documentation of a complete review of the comments received was provided to the decision maker for this EA. Some concerns raised in the comments received were already addressed in the EA or outside the scope of the analysis, but some of the comments indicated areas that warranted additional clarification or treatment. These comments and the WS response are available in Appendix A.

VII. AGENCY AUTHORITIES

Under various acts of Congress, the Secretary of Agriculture is authorized to carry out wildlife control programs necessary to protect the Nation's agricultural and other resources. Among these are the Act of March 2, 1931, 46 Stat. 1468-69, 7 U.S.C. §§ 426-426b, as amended and Public Law No. 100-202, § 101(k), 101 Stat. 1329-331, 7 U.S.C. § 426c. Under the Act of March 2, 1931 and 7 U.S.C. § 426c, the Secretary of Agriculture may carry out these wildlife control programs alone, or may enter into cooperative agreements with States, local jurisdictions, individuals and public and private agencies whereby they may fund and assist in carrying out such programs. The Secretary has delegated the

authority under both these Acts to APHIS. Within that agency, the authority resides with the Wildlife Services (WS) program.

The PGC is charged by law 322 (a) Title 34 "to protect, propagate, manage, and preserve the game or wildlife of this Commonwealth and to enforce, by proper actions and proceedings, the law of this Commonwealth relating thereto."

VIII. DECISION AND RATIONALE

I have carefully reviewed the EA and the input resulting from the EA review process. I believe the issues identified in the EA are best addressed by selecting Alternative 5, *Integrated Wildlife Damage Management (Proposed Action)*, and applying the associated standard operating procedures and monitoring measures discussed in Chapter 3 of the EA. Alternative 5 provides a mix of technical assistance, non-lethal and lethal methods. Alternative 5 provides the best range of damage management methods considered practical and effective, addresses the issues and provides safeguards for public safety, and accomplishes WS' Congressionally directed role in protecting the Nation's agricultural and other resources. WS' policies and social considerations, including humane issues, will be considered while conducting IWDM. While Alternative 5 does not require non-lethal methods to be used, WS will continue to provide information on and encourage the use of practical and effective non-lethal methods (WS Directive 2.101). I have also adopted the EA as final because comments from the public did not change the conclusions in the analysis.

FINDING OF NO SIGNIFICANT IMPACT

The EA indicates that there will not be significant impact, individually or cumulatively, on the quality of the human environment because of this proposed action, and that these actions do not constitute a major Federal action. I agree with this conclusion and therefore determine that an EIS will not be necessary or prepared. This determination is based on the following factors:

1. Coyote and feral dog damage management, as conducted in Pennsylvania is not regional or national in scope.

2. The proposed action will not have an impact on unique characteristics of the areas such as historical or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecological critical areas.

3. The proposed action will not significantly affect public health and safety.

4. The effects on the quality of the human environment are not highly controversial. Although there is opposition to WS damage management, this action is not controversial in relation to size, nature or effects.

5. Standard Operating Procedures adopted as part of the proposed action lessen risks to the public, prevent adverse effects on the human environment and reduce uncertainty and risks.

6. The proposed action does not establish a precedent for future actions with significant effects. This action would not set precedence for additional WS damage management that may be implemented or planned in Pennsylvania.

7. The number of animals taken (both target and non-target) by WS annually is small in comparison to the total population. Adverse effects on wildlife or wildlife habitats would be minimal.

8. No significant cumulative effects were identified by this assessment or other actions implemented or planned within the area.

9. Coyote and feral dog damage management would not affect cultural or historic resources. The proposed action does not affect districts, sites, highways, structures or objects listed in or eligible for listing in the National Register of Historic Places, nor will it cause a loss or destruction of significant scientific, cultural, or historical resources.

10. An evaluation of the proposed action and its effects on State and Federally listed T/E species determined that no significant adverse effects would be created for these species. The proposed action will fully comply with the Endangered Species Act of 1973, as amended. WS has consulted with the regarding potential risks to State listed threatened and endangered species and their input was used to develop Standard Operating Procedures for the proposed action.

11. This action would be in compliance with federal, State and local laws or requirements for damage management and environmental protection.

For additional information regarding this decision, please contact Jason Suckow, State Director, APHIS,WS, P.O. Box 60827 Harrisburg, PA 17106, or by phone @ 717-236-9451.

Rick D. Owens

Rick D. Owens
Acting Regional Director, USDA-APHIS-WS
Raleigh, North Carolina

3/18/5

Date

APPENDIX A
RESPONSE TO COMMENTS

This Appendix contains issues raised by the public during the comment period for this EA and WS' response to each of the issues. Comments from the public are numbered and are written in bold text. The WS response follows each comment and is written in standard text.

1. The EA fails to fully explain what procedures WS will use under either the proposed action or the other alternatives to evaluate damage.

We disagree with this claim as demonstrated by the analysis in the EA and WS' programmatic Environmental Impact Statement (USDA 1997, Revised) to which the EA is tiered. The WS Decision Making process is a thought process for evaluating and responding to routine damage complaints (Section 3.3.3) similar to other professions. WS' professionals evaluate the appropriateness of strategies, and methods are evaluated for their availability (i.e., legal and administrative) and suitability based on biological, economic, environmental and social considerations. Following this thought process, the methods deemed to be practical and effective for the situation are developed into a management strategy and the results are documented in the WS Management Information System. The results are summarized and provided to the cooperating agencies for monitoring and evaluation purposes

The commentor made reference to the WS Decision Model (Slate et al. 1992) as "a one-page, seven-box, idealized diagram, not sufficient to describe this proposed action." Slate et al. (1992) is a published article that is cited in the EA during discussion of the WS Decision Model. The article provides more detail about the WS Decision Model and USDA (1997, Revised), to which the EA is tiered, provides detail and examples of how the model is used. In compliance with CEQ regulations, agencies are encouraged to tier their EAs to previously prepared EISs and to incorporate material by reference in order to reduce the volume of NEPA documents (40 CFR 1502.20, 40 CFR 1502.21). WS attempted to reach a balance between providing enough information for the public and decision makers and to also comply with CEQ regulations to reduce bulk and excessive paperwork (Eccleston 1995).

2. EA does not say under what conditions WS will use non-lethal methods, nor does it provide examples of situations where non-lethal may not be used first. WS provides no indication that it will give non-lethal methods time to work before lethal methods are employed.

One of the objectives for the EA (Section 1.5) is to "Encourage livestock producers to adopt non-lethal control methods." WS encourages and considers the use of non-lethal methods before lethal methods whenever practical and effective (WS Directive 2.101; Sections 3.1.5, 3.4.1). However, WS recognizes that the most effective approach to resolving wildlife damage is to use an integrated approach which may call for the use of several damage management methods (non-lethal and/or lethal) simultaneously or sequentially. Some non-lethal techniques like the construction of coyote proof fences, or acquiring and training a livestock guard dog take time. Depending upon the circumstances at a site, WS might use lethal methods to try and remove a specific depredating animal and give the cooperator relief from predation while the cooperator works on implementing methods to reduce the risk of future problems. If the requester is already using non-lethal methods, WS would not recommend continuing to implement techniques that have not proven effective in resolving the current damage problem. However, because each coyote may respond to non-lethal methods differently, the techniques could be recommended as strategies for resolving future problems.

3. WS has omitted an alternative that would require, in each damage situation, that all feasible non-lethal methods be exhausted before turning to lethal control.

This comment apparently suggests that WS does not consider non-lethal methods when devising a management strategy. This is far from the truth and all reasonable alternatives were evaluated in the EA. WS' proposed alternative, "Integrated Wildlife Damage Management", as outlined in the EA is similar to a non-lethal before lethal alternative because WS encourages and considers the use of practical and effective non-lethal methods before lethal methods (WS Directive 2.101). Adding a non-lethal before lethal alternative and the associated analysis would not add additional information to the analysis for the public or decision maker. WS recognizes that the most effective approach to resolving wildlife damage is to use an integrated approach which may call for the use of several damage management methods (non-lethal and/or lethal) simultaneously or sequentially. If the requester is already using non-lethal methods or if the coyotes or feral dogs have habituated to frightening devices or are killing despite the presence of guard animals, WS would not consider continuing to implement those techniques because they have not proven effective. When evaluating methods for a damage situation, WS recognizes that some methods may be more or less effective or applicable at any given site.

4. EA does not provide data on the efficacy of lethal or non-lethal techniques. Need for action is based on the assumption that WS' damage management strategies benefit agricultural producers, property owners, natural resource managers and others.

It is recognized that the most effective approach to resolving wildlife damage is to use an integrated approach which may call for the use of several damage management methods simultaneously or sequentially (USDA 1997, Revised). The purpose behind Integrated Wildlife Damage Management (IWDM) is to implement effective management methods in a cost-effective[1] manner while minimizing the potentially harmful effects on humans, target and non-target species, and the environment. Under the proposed alternative, the analysis showed that the methods proposed for use under an IWDM approach are the most effective and practical way to resolve damage problems. The efficacy of each alternative is based on the types of methods employed under that alternative. The efficacy of each method is based, in part, on the application of the method, the restriction on the use of the method(s), the skill of the personnel using the method and, for WS personnel, the guidance provided by WS Directives and policies. It is recognized that some methods may be more or less effective, or applicable depending on weather conditions, time of year, biological considerations, economic considerations, legal and administrative restrictions, the species responsible, magnitude of the damage, extent of damage, duration and frequency of the damage, prevention of future damage, presence of non-target species, or other factors. Because these various factors may preclude the use of certain methods, it is important to maintain the widest possible selection of damage management methods to most effectively resolve coyote damage problems. Data and studies on the efficacy of specific damage management techniques are provided in the literature cited in Appendix A of the EA and Appendix B of this FONSI. See also response to issue 21.

5. EA fails to provide public with information showing that predation is not the primary cause of all livestock losses.

Commentor implies that because losses to predation are only one of a number of causes of mortality in livestock and that because losses to predation are not as great as losses to other causes, livestock producers should not attempt to reduce losses whenever possible. We do not agree. It is WS policy to assist the public with wildlife damage management when requested. The nature of that assistance is what is to be determined in this EA. The EA provides data showing that coyote and feral dog predation can be a problem for livestock producers in PA. Statewide predation loss statistics may not seem high, but it is important to note that the losses are not evenly distributed across the landscape or borne equally by all livestock producers. Even among livestock producers using similar animal husbandry practices, only a

1 The cost of management may sometimes be secondary because of overriding environmental, legal, human health and safety, animal welfare, or other concerns.

fraction of producers experience predation problems. Impacts on individual producers may be much higher than is indicated by statewide averages. Consequentially, WS responds to coyote and feral dog predation on a case-by-case basis.

6. Opposed to lethal methods. Non-lethal methods are adequate to resolve the problem.

WS realizes that the death of any animal is unacceptable to many people and regrettable. WS continues to pursue efforts to improve non-lethal methods and the selectivity of our damage management methods, and maintains and funds the National Wildlife Research Center (NWRC) to develop such methods. However WS also recognizes that while non-lethal methods can be effective for some situations, each of the non-lethal methods available also has its limitations. Restricting coyote and feral dog damage management to non-lethal methods would not allow for a full range of integrated techniques to resolve damage problems. WS believes that implementation of only non-lethal methods would not allow WS the ability to address every damage situation in the most effective manner, especially in situations where expediency is required because of risks to public health and safety.

7. WS should provide producers information on the value of reducing the availability of carrion at their site in order to prevent coyotes from being attracted to their site. This should include a list of livestock rendering facilities for use by producers in winter months when burial is not feasible.

Advice on the importance of carcass removal is part of the technical assistance on husbandry practices that WS provides to all cooperators requesting WS assistance. This includes recommendations that producers seek rendering facilities for carcass disposal during seasons when burial is not possible. See Appendix B in the EA on animal husbandry

8. WS efforts should only target the specific offending animals.

WS uses IWDM and the WS decision model to develop management strategies that alleviate damage in a cost effective manner while minimizing the potentially harmful risks to humans, pets, nontarget species, and nontarget individuals. Non-lethal techniques and those techniques with a high probability of capturing specific offending individuals are optimal but not always effective or suitable for some situations. WS and research biologists at the National Wildlife Research Center continue to develop and improve non-lethal techniques, techniques with reduced risk to nontarget species, and techniques which increase WS's ability to target offending individuals. Unfortunately, given the limitations of the methods currently available, sometimes the only technique(s) that are suitable for a given situation are those with a greater likelihood of capturing more coyotes than the ones involved in the predation problem. It should be noted that although some techniques may capture individuals that are not involved in the specific instance of predation, they also capture offending individuals and can be effective in reducing damage.

For example, with coyotes, the Livestock Protection Collar is highly selective for removing offending animals because a predator would have to grab a collar-bearing sheep by the throat and puncture pouches on the collar to receive the toxicant. However, this technique has limitations including public concerns over the use of toxicants and label limitations on the types of locations suitable for collar use. Gese and Grothe (1995) concluded from observing wild coyotes that the dominant pair was involved in vast majority of predation attempts. Blejwas et al. (2002) observed that removal of both or either member of a breeding pair reduced or eliminated predation during the subsequent 3 month period. Calling and shooting and the use of decoy dogs elicits a response from territorial individuals and is preferred for many instances of coyote predation. However, some territorial coyotes do not respond to the calls and decoy dogs. Additionally, shooting may be expensive because of the staff hours involved and is restricted to areas where it is legal and safe to use firearms.

9. Coyote populations will only rebound from efforts to reduce coyote numbers. Population control via lethal methods without habitat management to reduce the number of coyotes an area will support or efforts to exclude coyotes will not resolve the problem. This is particularly true in the case of preventive control. Population control is an inappropriate and impossible goal for coyote management.

WS does not seek to manage large scale coyote populations. However for some damage situations, reducing the density of animals in the immediate vicinity of the predation problem can provide relief from coyote predation. WS recognizes (Section 4.1.1) the resiliency of coyote populations and the fact that the proposed action will not result in long-term reductions in coyote populations. Even though the reduction in local populations is not anticipated to last, timed properly, the local population reduction can last long enough for the prey animal to be protected (calves, lambs, deer fawns, etc.) to reach a size or level of maturity where it is at less risk of predation, it may also give producers time to implement preventive damage management methods like improvements to fencing and obtaining and training livestock guarding animals. Data by Wagner and Conover (1999) indicate that, in the Intermountain West, preventive control could be effective in reducing coyote predation even when conducted 6-7 months before the arrival of sheep in the treated area. See also discussion of preventive control in Section 3.2.1.1. Commentor implies that habitat management would be required to reduce coyote densities and coyote damage. While WS agrees that habitat management could be conducted to reduce the coyote carrying capacity of an area, WS notes that the level and type of habitat management that would result in lower coyote populations would likely have adverse impacts on many other wildlife species that also use the area.

10. EA does not adequately consider impact on meso-predators.

While the phenomena of meso-predator release has been documented in the absence of larger predators, this phenomena would not likely result from WS's predator damage management efforts. This comment gave the impression that the commentor believes WS engages in general population suppression of coyotes across the State which is not the case. As noted in the EA (Section 4.1.1), WS removes only a minor portion of the coyote population during programs to reduce predation on livestock, and immigration and natural reproduction contribute to relatively rapid repopulation of areas where coyotes have been removed. Given the rapid coyote immigration rates anticipated for this study, we do not anticipate substantial impacts on other predator/omnivore populations (e.g. skunk, raccoons, fox).

11. The reference for Houben (2004) is incomplete. Please explain how benefit estimates were derived. Was this a peer-reviewed journal?

The Houben article uses data from the literature to estimate livestock losses to predation in the absence of predation management efforts. These figures are compared to NASS livestock loss statistics. The full citation for Houben (2004) is: Houben, J.M. 2004. Status and management of coyote depredations in the eastern United States. An American Sheep Industry Association Inc. Publication. Sheep and Goat Research Journal, special edition: Predation 19: 16-22. The Sheep and Goat Research Journal is a peer-reviewed scientific publication of sheep and goat research findings published three times a year.

12. The EA fails to objectively analyze the issue of humaneness and it is the agency's responsibility to take this seriously.

WS disagrees with this claim and takes the issue of humaneness of methods seriously (Sections 2.2.5, 4.1.5, and 3.5.52). WS continues to evaluate existing and new methods for animal welfare and humaneness concerns. WS' mission is to reduce coyote damage, not coyote populations and WS spends

thousands of dollars each year to develop and bring to the field newly developed and more species-specific and humane methods. Commentor stated that, "We note as well that unnecessary death is a significant issue in any proposed management action." WS couldn't agree more with that sentiment. While it is regrettable that animals die to alleviate damage in some situations, WS believes that if an animal death must occur, then it should occur with a minimum amount of distress and pain, in as short a period of time as practical, and with compassion. But the commentor is apparently suggesting that only non-lethal methods should be used to protect resources from coyote damage or potential damage. What if damage occurs in spite of the use of non-lethal methods? What about the humaneness of having family pets and livestock injured and killed by coyotes and feral dogs? WS is trying to achieve a "balance" between the needs of people, recognizing that people are part of the environment, while keeping issues like protection of the environment, economics, humaneness, etc. in perspective. WS recognizes that animal welfare organizations are concerned that some methods used to manage wildlife damage may expose animals to pain and suffering. However, WS also recognize another side to this issue, as perceived by the livestock industry, pet owners, airport managers and others.

13. Contests the use of "non-indigenous" to define the presence of coyotes in the Eastern U.S. Coyotes are merely filling a niche that has always been filled by some sort of canid.

As stated in Section 1.4.3 of the EA, WS agrees that coyotes in Pennsylvania are filling an available niche left by the absence of larger canid predators (Boer 1992).

14. Criticism of interpretation of Laudré et al. (2001) data on indirect impacts of predation.

Laundré et al. (2001) concluded that for female elk and bison with calves, exposure to predation resulted in significant increases in vigilance behavior at the expense of foraging time. Unless the animals compensate through changing foraging behavior, timing, or location, the reduction in foraging effort may have a significant impact on individual animals via 1) decreased body mass and body fat content in females; 2) lower survival rates of adults and young during stress periods such as winter; and 3) lower birth masses of calves in spring. Laundré et al. (2001) stated that, "If additional fieldwork supports these predictions then it can be concluded that fear of predation not only controls the foraging patterns of individuals but can have significant consequences for the population level". Whether these impacts are positive or negative for the ecosystem will depend upon the specifics of each site (e.g., are elk overabundant at the site or are they at lower densities than might be desirable). See also response to issue 25.

Impacts of predation on livestock are addressed by Howery and DeLiberto (2004). Findings by Howery and DeLiberto are addressed in the EA Section 1.4.3.4 which includes specific examples of indirect impacts of predation on livestock.

15. An action is not more or less humane because it is more or less technically feasible. WS must be clear about the fact that it is not using the most humane method possible for reasons of feasibility or cost effectiveness.

WS does not contend that a technique is humane because it is more or less technically feasible. WS states that it seeks to use methods that cause the least amount of animal suffering within the constraints imposed by current technology and funding, while still providing sufficient damage management to resolve problems. Humaneness is addressed in the EA sections 2.2.5 and 4.1.5 and in the discussion of WS standard operating procedures in EA Section 3.5.5.

16. Opposed to use of inhumane methods including traps, neck snares and denning.

Variability in public perceptions of what constitutes a humane or appropriate method are addressed in Sections 2.2.5, 2.2.6, 4.1.5 and 4.1.6. Humaneness is addressed in the EA in Sections 2.2.5, 4.1.5, and in the discussion of WS standard operating procedures in EA Section 3.5.5.

17. WS should only use live traps for coyote and feral dog management. Captured animals [dogs] should be turned over to the local animal shelter. Concerned that WS may confuse feral dogs and escaped pets. What will prevent WS from accidentally killing an accidentally escaped pet?

Cage type live-traps may be used by WS (Appendix B). However, the conditions at some sites preclude the use of cage traps and not all dogs will enter a cage trap. It is usually difficult to capture wary predators like coyotes in live traps. WS will give all dogs captured to the Bureau of Dog Law Enforcement. It is important to note that, as stated in EA Section 1.10.3.1, there are conditions under which a dog in the act of pursuing or wounding livestock, pets or human beings may be killed.

18. WS' agreements never involve the use of humane responsible long-term non-lethal alternatives.

This statement is false. However, it is true that WS agreement forms do not accurately depict WS or cooperator use and recommendation of non-lethal and preventive techniques. WS' agreements only cover WS operational assistance. Many non-lethal and preventive techniques are employed by the landowner/resource manager and do not require WS operational assistance, so their implementation would not be represented in WS' agreements. WS usually does not charge for technical assistance on non-lethal and preventive damage management techniques, so agreements are not completed for these types of activities. Lastly, cooperators usually do not contact WS until they have exhausted their ideas on how to address the problem. It is not unusual for WS to arrive at a damage site to find that the cooperator has already tried non-lethal strategies. In these situations, WS' assistance, as reflected in the agreement, may be to provide operational assistance with capture techniques and lethal tools that require specialized tools and training for safe and effective damage management.

19. EA should state whether WS has undertaken efforts to encourage responsible pet ownership in PA. Such efforts could do much to reduce depredation problem.

The role of education in the proposed action is also described in the EA in Sections 3.2.2.1 and 3.2.2.3. WS education efforts include providing information on the importance of responsible pet ownership. Issues of responsible pet ownership are also addressed by the Pennsylvania Bureau of Dog Law Enforcement and by private organizations like the Humane Society of the United States.

20. WS must be leader in use of up-to-date non-lethal methods. Commentor was concerned that the management methods used by WS may not include the most recent innovations in methods for preventing and reducing coyote and feral dog damage.

WS uses trained, professional employees to conduct coyote and feral dog damage management programs in Pennsylvania and continues to train employees on newly developed and available techniques. The National Wildlife Research Center functions as the research arm of WS by providing scientific information and development of methods for wildlife damage management that are effective and environmentally responsible. NWRC scientists work closely with WS state programs, wildlife managers, researchers, and others to develop and evaluate wildlife damage management techniques.

As mentioned numerous times, WS uses an integrated approach and the WS Decision Model to develop management strategies that alleviate damage in the most cost effective manner possible while minimizing the potentially harmful risks to humans, pets, non-target species and individuals. Chapter 3 and Appendix B of the EA discuss methods that are currently available as well as methods that may be considered

should they become available at a future time (e.g. fertility control). Additionally, the NWRC has been a leader in the testing and development of repellents and aversive methods for reducing predation (Mason et al. 2001, Shivik and Martin 2001, Breck et al. 2002, Shivik et al. 2002, Shivik et al 2003, Vercauteren et al. 2003, Shivik 2004). Motion activated frightening (noise and light) devices that operate when a coyote crosses a laser beam fence have proven promising in reducing predation on range bands of sheep (Vercauteren et al. 2003), and similar systems that are activated by signals from collars on predators have proven effective in reducing predation by wolves. Systems that emit a slight shock to collared predators (like a dog-training collar) that approach protected prey also appear promising. The NWRC is working to address logistical constraints on the field applications of these techniques including the need to collar predators, the size of the area that can be protected by the laser system and costs of these systems (Fall and Mason 2002, Shivik 2004).

21. Potential for lethal predator control to actually cause increased coyote populations and increased predation because of compensatory reproduction.

See EA Section 2.4.5. Assessing the effect of damage management programs on coyote populations requires an understanding of the mechanisms and behaviors involved in regulating coyote demographic processes (Knowlton et al. 1999). Coyotes are territorial with territories spaced contiguously across the landscape like pieces of a puzzle, and coyotes are year-round residents, living in summer where they can survive in winter (Weaver 1979, Gantz 1990, Shivik et al. 1996). Hence, territory density remains relatively constant (Knowlton et al. 1999) with each territory maintained and controlled by a dominant pair of coyotes (alpha pair), with associated coyotes, including pups (beta coyotes) (Gese et al. 1996*a*, 1996*b*). Populations also include transient and dispersing individuals. Coyotes are monestrous with only the dominant breeding pair typically producing a single litter per territory each spring (Kennelly and Johns 1976); beta females may also produce offspring, but this rarely occurs (Gese et al. 1996*a*). Because stable populations require that, on average, breeding adults only recruit enough surviving offspring into the breeding population to replace themselves, normally less than 10% of the young from a given pair of coyotes need to survive and reproduce to maintain the population (Knowlton et al. 1999). The other 90% die, or fail to reproduce.

Available food, especially in winter (Weaver 1979, Gese et al. 1996*a*), is often considered a major factor regulating coyote abundance (Gier 1968, Clark 1972), mediated through social dominance and territoriality (Knowlton and Stoddart 1983, Gese et al. 1989, Knowlton and Gese 1995, Windberg 1995). Some researchers believe food abundance regulates coyote numbers by influencing reproduction, survival, dispersal, space-use patterns, and territorial density (Gier 1968, Knowlton 1972, Todd et al. 1981, Todd and Keith 1983, Mills and Knowlton 1991, Gese et al. 1996*a*). In contrast, Crabtree and Sheldon (1999) have suggested that litter size at birth (among coyotes) appears relatively invariant with respect to changes in prey abundance, and that litter size at birth appears largely unaffected by levels of human exploitation. Connolly and Longhurst (1975) demonstrated that coyote populations in exploited and unexploited populations do not increase at significantly different rates and that an area will only support a population to its carrying capacity.

Dispersal of "surplus" young coyotes is the main factor that keeps coyote populations distributed throughout their habitat. Such dispersal of subdominant animals removes surplus animals from higher density areas and repopulates areas where artificial reductions have occurred. Several studies (Connolly et al. 1976, Gese and Grothe 1995, Conner 1995, Shivik 1995, Sacks 1996, Shivik et al. 1996, Gese 1999) investigated the predatory behavior of coyotes and determined that the more dominant (alpha) animals (adult breeding pairs) were the ones that initiated and killed most of the prey items. Concerns that coyote removal activities might just exacerbate predation on livestock appear to be unfounded since the removal of local territorial (dominant, breeding adult) coyotes actually removes the individuals that are most likely

to kill livestock and generally results in the immigration of subdominant coyotes that are less likely to prey on livestock.

22. WS needs to educate people on means to coexist with wildlife including non-lethal damage management techniques.

Goals of the proposed program (Section 1.5) include encouraging livestock producers to adopt non-lethal control methods and to provide predator management workshops to livestock producers and agency personnel. The role of education in the proposed action is also described in the EA in Sections 3.2.2.1 and 3.2.2.3.

23. Concerned about human health and safety risks to children and the community at large from use of firearms and traps, and snares.

Risks to human health and safety from the methods used by WS are addressed in the EA in Sections 2.2.4 and 4.1.4 and in the WS programmatic EIS (USDA 1997, Revised, Appendix P). Standard Operating Procedures for the protection of human health and safety are addressed in Section 3.5.4.

24. Use of preventive control is not acceptable or justified.

Variability in public perceptions of what constitutes a humane or appropriate method are addressed in Sections 2.2.5, 2.2.6, 4.1.5 and 4.1.6. Preventive control is used in areas where a pattern or history of losses has occurred and would be likely to continue or increase without intervention. For example, if a producer had experienced high lamb losses in previous years, preventive control would be done just prior to lambing in that same location to prevent recurrence and continued economic damage. Role and efficacy of preventive predation management is discussed in Section 3.2.1.2.

25. Coyote predation is not a limiting factor on wildlife populations and is not appropriate, especially for the protection of PA's already overabundant deer population.

Some respondents felt that wildlife populations should not be manipulated to benefit hunters and recreationists. This is an individual perception. As stated in the EA the jurisdiction for managing resident wildlife rests with the Pennsylvania Game Commission. The Pennsylvania Game Commission may request WS' assistance in achieving their management objectives. Impacts of coyote predation on deer populations are discussed in Section 1.4.5. In select circumstances, predation management can be beneficial in restoring and/or protecting prey populations. However, a wide variety of factors can influence the success of a predation management program. A thorough understanding of the factors influencing and limiting prey populations is essential to determining whether predation management is likely to be a beneficial strategy (Gese and Knowlton 2001, Cote and Sutherland 1997). Therefore, predation management programs designed to enhance wildlife populations will only be conducted if biologists from the Pennsylvania Game Commission determine that predation is likely to be a key factor limiting the prey population, and request WS assistance with predation management.

26. Commentor disagrees with statement that death by WS methods may be more humane than natural causes of mortality.

Issue of humaneness is addressed in EA Sections 2.2.5 and 4.1.5. WS recognizes that the issue of the humaneness as it relates to the killing or capturing of wildlife is an important but very complex issue. Humaneness, in part appears to be a person's perception of harm or pain inflicted on an animal, and people may perceive the humaneness of an action, including death by "natural" causes differently.

APPENDIX B – LITERATURE CITED

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